Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

ConocoPhillips Company
Lake Charles Refinery – Area D
Westlake, Calcasieu Parish, Louisiana
Agency Interest Number: 2538
Activity Number: PER20070006
Proposed Permit Number: 2626-V5

I. APPLICANT

Company:
ConocoPhillips Company
2200 Old Spanish Trail
Westlake, Louisiana 70669

Facility:
Lake Charles Refinery – Area D
2200 Old Spanish Trail
Westlake, Calcasieu Parish, Louisiana
Approximate UTM coordinates are 473.405 kilometers East and 3,345.357 kilometers North in Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Lake Charles Refinery (LCR) processes crude oils into chemical and petrochemical feedstock, gasoline, heating oil, residual fuels, petroleum coke, lube oils, and other miscellaneous products. To refine the crude, it utilizes crude-topping units, crude vacuum units, a fluid catalytic cracking unit, an alkylation unit, a polymerization unit, catalytic reformers, desulfurization units, petroleum coking units, a calcining unit, sulfur recovery units, a hydrodewaxer unit, a hydrofinisher unit and associated infrastructure including plant utilities. Lake Charles Refinery is organized into Area A, Area B, Area C, Area D, and Excel Paralubes. ConocoPhillips Company presently operates this refinery under the following permits:

PSD-LA-390	granted 08/10/1981
PSD-LA-419	granted 10/08/1981
PSD-LA-533 (M-3)	granted 07/02/1993
PSD-LA-584 (M-4)	granted 05/19/2006
PSD-LA-699	granted 05/28/2004

2623-V3	granted 08/24/2005 (for Area A)
2624-V5	granted 07/20/2006 (for Area B)
2625-V4	granted 08/24/2005 (for Area C)
2626-V4	granted 01/16/2007 (for Area D)
2627-V2	granted 08/24/2005 (for Excel Paralubes)

In addition, the Lake Charles Refinery is one of four refineries included in the Consent Decree lodged December 20, 2001 (Civil Action Number H-01-4430 filed in the United States District Court for the Southern District of Texas).

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire, dated March 13, 2007, were submitted by ConocoPhillips Company requesting a Part 70 operating permit modification for the Lake Charles Refinery – Area D. Additional information dated April 3 and May 15, 2007 was also submitted.

Project

The Heartcut Reformate Project and the Site Remediation Project were proposed for this modification.

The LCR Reformate Splitter, W-16102, is designed to fractionate reformate into three streams: light, heartcut, and heavy reformate. Currently the splitter is not fractionating the heartcut stream, and it remains part of the light/heavy streams that are going directly to gasoline blending. The Heartcut Reformate Project is to split out the heartcut reformate, store it (in Tank T-30) and transfer it offsite via the product loading docks.

The Site Remediation Project is to conduct a test of a pilot system and to commence a subsequent full-scale operation using a new in-situ Electrical Resistance Heating (ERH) technology for remediating 1,2-dichloroethane (EDC) from groundwater and soil. This new process, if successful, will remediate the EDC in soil and groundwater faster and more efficiently than the existing remediation process, allowing for cleanup completion on a much short schedule. A vapor collection system over a bioremediation unit – Condensation Treatment Unit (CTU) – will be added. The CTU vapors will be tied into the RTU vent stream prior to the GAC so that the CTU vapors will also be controlled.

Proposed Permit

Permit 2626-V5 will be a permit modification of Part 70 Operating Permit 2626-V4, issued January 16, 2007, for the Lake Charles Refinery – Area D.

Permitted Air Emissions

Estimated emissions from the Lake Charles Refinery – Area D in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	0.22	0.97	+ 0.75
SO_2	1.22	1.22	-
NO_X	15.17	14.33	- 0.84
CO	38.90	37.50	- 1.4
VOC	563.78	578.74	+ 14.96

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Prevention of Significant Deterioration/Nonattainment Review

PSD review is not required since emission increases due to the projects are below the PSD significance levels for all the pollutants,.

Streamlined Equipment Leak Monitoring Program

It is required that the Lake Charles Refinery comply with a streamlined equipment leak monitoring program. Compliance with the streamlined program shall serve to comply with each of the fugitive emission monitoring programs being streamlined.

For the Lake Charles Refinery, fugitive emissions are subject to the requirements of 40 CFR 61 Subparts F, J, and V, 40 CFR 60 Subpart GGG, LAC 33:III.2122, and LAC 33:III.5109. (40 CFR 63, Subpart CC is not included in this program.) Among these regulations, Louisiana MACT Determination for Refineries is the overall most stringent program. Therefore, fugitive emissions shall be monitored as required by this program (Louisiana MACT Determination for Refineries).

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
Lake Charles Refinery	LAC 33:III.5109 – Louisiana MACT Determination for Refineries	≥ 5% VOTAP	Louisiana MACT Determination for Refineries
	40 CFR 61 Subparts F, J, and V	≥ 5% VOHAP	
	40 CFR 60 Subpart GGG	≥ 10% VOC	
	LAC 33:III.2122 – Louisiana Fugitive Emission Control for Specified Parishes	≥ 10% VOC	

MACT Requirements

The facility is subject to Louisiana MACT Determination for Refineries and 40 CFR Part 63, Subparts Y, CC, and GGGGG. Detailed requirements are listed in the Specific Requirements Section of the permit.

Air Quality Analysis

Modeling analysis on 1,2-dichloroethane emissions was conducted by the Engineer Division. The results indicate that 1,2-dichloroethane emissions meet the Louisiana Toxic Air Pollutant Ambient Air Standard.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield is requested.

VI. PERIODIC MONITORING

No additional periodic monitoring is required.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient

Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.